

## **Category: Oil Drilling**

California's oil drilling equipment emissions inventory is an estimate of the amount and types of pollutants emitted from equipment used in oil drilling applications. The equipment that make up this category are from California's Portable Equipment Registration Program and currently only includes diesel engines.

The equipment types and 2000 population for this category are:

Equipment Type	Fuel Type	2000 Population
Compressors (Workover)	D	95
Drill Rig	D	1306
Drill Rig (Mobile)	D	256
Generator (Drilling)	D	86
Generator (Workover)	D	132
Lift (Drilling)	D	86
Other Workover Equipment	D	271
Pressure Washers	D	1
Pump (Drilling)	D	436
Pump (Workover)	D	460
Snubbing	D	3
Swivel	D	84

### **Emissions Inventory:**

As with other OFFROAD equipment types, the emissions inventory for the dredging equipment is calculated as the product of the emission rate (in grams per horsepower-hour), engine population, and activity (hours per year) in annual average use hours.

[Calculating Emissions Inventory \(PDF Format\)](#)

For the current emissions inventory (tons/day):

[Air Resources Board Almanac](#)

### **Input Data Sources:**

The input factors used by the OFFROAD Model are obtained from various data sources listed below:

Input Factor	Source of Data
Population (base year 2000)	Statewide Portable Engine Registration Program (2004); ARB (MSCD) Diesel Equipment Survey (2005)
Useful Life	Power Systems Research (1996)
Activity (hr/yr)	Power Systems Research (1996); ARB (MSCD) Diesel Equipment Survey (2005)
Average horsepower	Power Systems Research (1996)
Load factor	Power Systems Research (1996)
Allocation factor	Energy & Environmental Analysis (EEA) document (1995)
Growth factor	DRI/McGraw-Hill employment data (1994)
Survival rate	Power Systems Research (1996)

For more additional background information on the input factors used by the OFFROAD Model: [\(Document Link\)](#)

For tables of input data for Dredging Equipment: [\(Document Link\)](#)

### **Adopted Regulations for Oil Drilling Equipment:**

**2005:** *(Reflected in OFFROAD Model)* Board approved Regulation to Establish a Statewide Portable Equipment Registration Program. [\(Document Link\)](#)

**2004:** *(Reflected in OFFROAD Model)* Board approved amendment to California's existing off-road diesel regulations to harmonize with USEPA Tier 4 regulation (40 CFR 1039). [\(Document Link\)](#)

**2000:** *(Reflected in OFFROAD Model)* Board approved the emissions inventory for off-road large CI engines ( $\geq 25$ hp) from the OFFROAD Model. [\(Document Link\)](#)

### **Future Improvements to the Oil Drilling Category:**

The emissions inventory from the OFFROAD Model strives to accurately represent the 'real-world' as accurately as possible. Therefore, the methodologies and data sources are constantly re-evaluated and updated where applicable. The following items are future improvements for the oil drilling category:

- Update population and activity values as new data becomes available
- Revise growth factors using REMI employment data (2001)
- Allocate equipment from the county down to the neighborhood level (GIS)